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DENTAL HEALTH STATUS AND DENTAL HEALTH SERVICES FOR RURAL YOUTH.

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ALTHOUGH DENTAL PROBLEMS ARE COMMON IN BOTH RURAL AND URBAN AREAS, RURAL CHILDREN SEEM TO HAVE MORE DIFFICULTIES. THE REASONS FOR THIS APPEAR TO BE THAT THERE ARE FEWER DENTISTS PER CAPITA IN RURAL AREAS, AND THAT THE RURAL CHILD IS USUALLY EXPOSED TO A WATER SYSTEM LACKING FLUORIDATION, WHICH IS THE MOST EFFECTIVE WAY OF ADMINISTERING FLUORIDES. HOWEVER, FLUORIDATION IS NOT ENOUGH BECAUSE DENTAL PROGRAMS WHICH PROVIDE ONLY PREVENTIVE MEASURES AND FAIL TO PROVIDE DENTAL TREATMENT ARE INADEQUATE. ADEQUATE DENTAL HEALTH PROGRAMS FOR RURAL YOUTH WILL REQUIRE THE COOPERATIVE EFFORTS OF ALL LEVELS OF GOVERNMENT. (ES)

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DENTAL HEALTH STATUS AND DENTAL HEALTH SERVICES FOR RURAL YOUTH

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Our Nation's children suffer severe dental problems, and it is an appalling fact that for many children little or nothing is done to correct these defects.

A few statistics, although not necessarily representative of the United States as a whole, will give you some idea of the dimensions of the problem.

Dental decay or as we dentists call it, dental caries, has three notable characteristics. First, its prevalence is almost universal--only about 5 percent of our population escape it. Second, the tooth is not capable of self repair--once caries is initiated, correction requires a visit to the dental office. Unless the decay is arrested and repaired, loss of the tooth will result. Third, caries begin early in life, is quite active during childhood and for many, continues into adulthood.

A composite picture of findings from surveys made in all parts of our country shows that, at age two, approximately 50 percent of our children have one or more decayed teeth. At the time he enters school the average child will have experienced decay in 4-6 primary or permanent teeth. By age 14, the number of teeth that are either decayed, missing or filled will have increased to somewhere between 8 and 11 permanent teeth. Unfortunately, a large percentage of these teeth have not been filled or have been extracted.

The U. S. Navy(1) has reported that the average recruit is missing 2.4 teeth and has 7 more which require fillings. According to the National Health Survey(2) 28 percent of the children age 5 to 14 years have never been to a dentist. Many others have had only infrequent contact with a dentist, usually for emergency services. Periodontal disease which is responsible for the loss of many teeth later in life, has its beginning during childhood as gingivitis. This condition is closely related to the level of oral hygiene and is also very prevalent among our children.

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Orthodontic deformities range from relatively minor deviations to severe and disfiguring malrelationships. Although precise information is not available on the prevalence of these deformities it is estimated that about half of our school aged children require some treatment and about one in five has an orthodontic problem which could be considered severe.(3)

Although dental problems are common in both rural and urban areas, it appears that the rural child has additional disadvantages. First, there are fewer dentists in rural areas. The Resource Analysis Branch, Division of Dental Health, USPHS, reports that in 1965 one in seven rural counties had no dentist and counties without a city of 5,000 had a ratio of 30.1 dentists for 100,000 population compared with 61.8 dentists per 100,000 for counties in a metropolitan area.(4) This disadvantage is also reflected in the number of dental visits per person per year reported by the National Health Survey.(5) In metropolitan areas the number of visits per year is 1.8, in rural nonfarm areas 1.2, and 0.9 in areas classified as farm. Fewer dentists, of course, means less dental care for those residing in rural areas. Also, dental clinics and organized dental health programs tend to concentrate in the metropolitan centers.

Second, because the rural setting usually requires an individual water supply and because the smaller communities have been slower to act, the rural youth does not have the same opportunity as his metropolitan counterpart to benefit from water fluoridation. Water fluoridation is a proven, easy, safe, and inexpensive procedure which reduces dental decay by about 60 percent.

The Division of Dental Health in the USPHS has in recent years given considerable thought and study to methods of improving dental health and opportunity for the rural resident through a balanced dental program consisting of preventive measures, health education, and treatment. Foremost among the Division's efforts which have particular application to rural areas are preventive measures for dental caries.

Water fluoridation is the most effective way of using fluorides and it is important that the fluoride be ingested during the years that the teeth are developing. A fluoridation program is relatively easy for homes serviced by a communal water supply--but it is also possible to connect a small fluoridator in the water system of an individual home. The usefulness of home fluoridators was demonstrated several years ago but they have not been popular because of cost and problems associated with servicing and maintenance.

Another approach studied by the Division was the fluoridation of a school water supply. Although this approach does not permit exposure to fluoride during the important pre school years, it was reasoned that some benefit could be gained for those teeth which develop later. A pilot project to test this theory was initiated in St. Thomas, Virgin Islands.(6) In order

to compensate for the fact that children would be consuming fluoridated water only at school, the concentration of fluoride used was slightly higher than that recommended for communal water fluoridation. A dental survey conducted 8 years after the initiation of the study showed that the children in the test schools did indeed have less caries than childrrn attending comparable schools where the water was not fluoridated. Presently, two additional studies are being conducted in Kentucky and Pennsylvania[7] to confirm the earlier findings and to more accurately determine the optimum level for school fluoridation. The 5 year results did show an appreciable inhibition of caries and the 8 year results are presently being analyzed. It appears that school fluoridation is a practical approach involving very little effort or expense.

Fluorides, of course, can also be administered topically; i.e., applied directly to the teeth. Several methods and agents have been proven to be effective. Topical fluoride projects fit well into school health programs. They are effective in reducing decay; are a non-frightening experience; require little time; and provide an experience around which the teacher can build a dental health education unit. They do, however, require professional personnel to make the applications. Another means of applying fluoride to the teeth, is the use of a fluoride containing paste for the routine prophylaxis. This procedure is especially well adapted to private practice and clinic treatment programs which include an annual or biennial examination and prophylaxis.

Another approach which has merit is supervised classroom toothbrushing with a fluoride containing dentifrice. Once the routine is established, only 4 or 5 minutes of classroom time is required. This procedure not only reduces decay but has the additional advantage of improving the health of the gingival tissues. Such a program could be greatly facilitated if, during the construction or renovation of school buildings, oral hygiene stations with running water are installed in the classroom or other specific area in the school.

Presently under study are other methods of self administration of fluorides under supervision. Investigations are underway to determine the effectiveness of a fluoride containing gel placed in a fitted tray and held in contact with the teeth for a specified number of minutes. Other workers are using a daily rinse of a weak solution of fluoride in an attempt to inhibit dental caries.

An old stand-by which should not be forgotten in a program of caries prevention is dietary control. For many years we have known that decay can be reduced by limiting the amount and the number of times fermentable carbohydrates are consumed during the day. School menus should be developed so that fermentable carbohydrates are avoided as much as possible and the harder, more detergent food incorporated as frequently as possible. Vending machines should be stocked with fruit and low carbohydrate foods

and beverages. While these measures by themselves are not likely to produce any dramatic reductions in dental decay, the ease with which they can be implemented indicates that they should be considered as an integral part of a school's dental health program.

Already alluded to has been the usefulness of preventive projects in which there is student participation for the development of dental health educational units. There are, of course, many other opportunities and a wealth of materials available to develop programs which would integrate dental health education into the school curriculum.

It is always disappointing to read proposals which include dental health education, examination, and preventive services but inadequate provisions for treatment--particularly for those children whose families cannot afford to pay for dental care. The problem often is largely financial but in the rural areas it also may be the non-availability of dental manpower.

It might be useful to review some of the resources available for the provision of dental services and to mention how some groups have made use of these resources.

The major source of dental care is, of course, the private practitioner. If, however, the area is isolated, or has no dentist, service can be brought into the area through the use of mobile units. An alternative is to transport the children to the dental office or clinic.

Dental care programs can be financed through local, state, or federal funds or combinations of all three. Among the local and state resources to be considered are health departments, school funds, foundations, and service clubs. Recent federal legislation has made additional funds available for programming dental care. Four of these sources deserve special mention.

A considerable amount of dental care is being provided to children under the Head Start and Community Action Programs of the Office of Economic Opportunity. The Elementary and Secondary Education Amendments of 1966 allow for supplemental school health services which can include dental care. The third source is the Comprehensive Health Planning and Public Health Service Amendments of 1966. Under this legislation, dental services may be included as a part of the state total health plan or as a special project to demonstrate the value of a new service or method of providing that service. Many children also are receiving dental care under the provisions of the legislation to improve the health of migrant laborers. Rural populations have approached the problem of organizing and providing dental services to their children in a number of ways. Some of these projects have been very successful because of the dedication and cooperation of the groups and individuals involved and the rapport and

communication among them. These important ingredients are not always present in the same degree in programs developed in urban areas.

Many groups have been able to make arrangements with the local dentists to provide the care in their offices. Where dental manpower has been unavailable, other approaches have been developed. In several states fully equipped dental trailers have been used to bring the services to the children. One community used some of their Head Start money to purchase such a trailer. The State Health Department assisted by providing the staff to operate the trailer during the first year. The alternative in areas where dental manpower is not available is to bus the children to the services. In one instance this meant a bus ride of 70 miles. The children found the outing both enjoyable and tiring but a tired pre schooler does not make the best dental patient. However, it was one way of doing the job. There also are examples of health departments cooperating by staffing existing facilities which may have required refurbishing. In other cases school boards have joined with health departments and OEO to finance a dental care program.

The scarcity of dental manpower in rural areas has been a particularly annoying problem. Some improvement in this situation is hoped for through the Health Professions Education Assistance Act which provides for the forgiveness of up to 50 percent of loans made to dental students who establish practices in areas designated as having a shortage of and need for dentists.

In summary then, the prevalence of dental problems is probably not very different for urban and rural children. Differences which do exist are likely to be related to factors other than rural living itself. The rural child, however, is in some respects disadvantaged. The dentist-population ratio is less favorable than in urban areas and comminal water fluoridation is not possible. However, other means of fluoride therapy are available and with adequate planning and effort a balanced dental health program can be made available to the rural youth.

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